

Rural Electrification Administration  
Telephone Engineering and Construction Manual

Section 225  
Issue No. 4  
Addendum No. 1  
June 1971

BELL SYSTEM TRAFFIC AGREEMENT

Purpose: The purpose of this addendum is to provide a revised "A" settlement schedule including revised "Small Exchange Factors." These are part of the average schedule formulas associated with the Bell System Traffic Agreement (Illustrative).

General:

1. In accordance with a Joint Report by USITA and Bell System representatives dated April 5, 1971, recommendations were made to adjust nationwide "A" average toll message schedules. Attached is the resulting revised settlement schedule A-1, including a downward revision of the small exchange factors.
  - 1.1 The Joint Report recommended that the supplemental schedules be effective January 1, 1971, for Independent Companies which have agreed to settlement arrangements per the Joint Report of August 25, 1970, and October 7, 1970.
  - 1.2 For individual study companies, the Joint Report also recommended certain revisions for settlement purposes to the intrastate subscriber plant factors. For engineering purposes, the effect of the revisions should be discussed with Bell System Independent Company Relations Managers.

Additions:

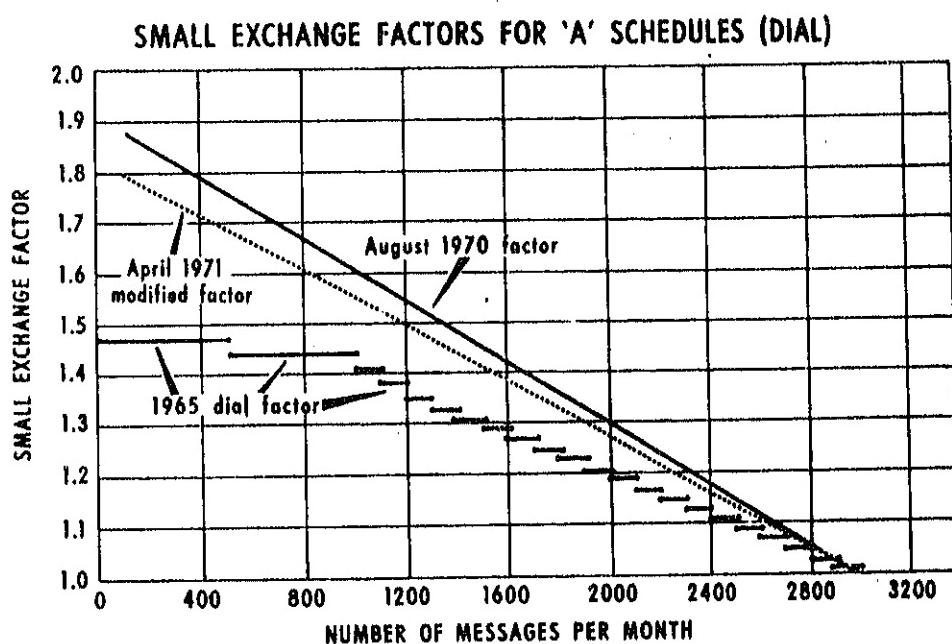
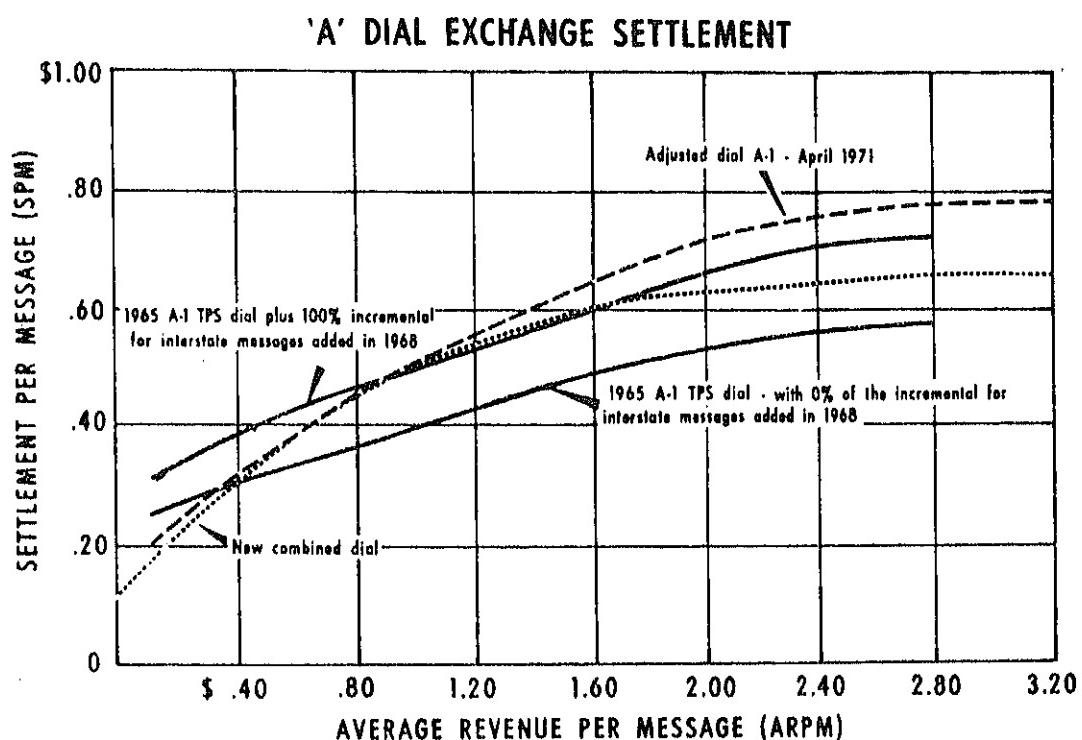
1. Revised "Graphical Presentation of Schedules," page 1, Appendix I.
2. Revised "A-1 Settlement Schedule for Dial Exchanges," April 1971. Replacement page designated Appendix II, Exhibit C, Attachment I.

Deletions:

1. Same pages dated August 1970 for the latter and October 1970 for the graphical representation.



GRAPHICAL PRESENTATION OF SCHEDULES





Appendix II  
Exhibit C  
Attachment I

A-1 Settlement Schedule For Dial Exchanges

The following settlement schedule is used to determine the A-1 settlement for dial exchanges. Total, combined (state + interstate) "A" function messages are used with this schedule.

SETTLEMENT SCHEDULE

- For an ARPM of \$2.859 or less  
 $SPM = .1607834 + (.4160742 \times ARPM) - (.06927916 \times ARPM^2)^*$
- For an ARPM of \$2.860 or more  
 $SPM = .7268799 + (.02 \times ARPM)^*$
- If there are less than 3000 settlement messages, a Small Exchange Factor (SEF) will be calculated as follows:  
 $SEF = 1.8250129 - (.0002750043 \times \text{settlement messages})^*$

\* Rounded to three decimal places. If the fourth decimal place in the natural calculation results in a 5 or more, the rounding is to the next higher third digit after the decimal. If the fourth decimal place in the natural calculation results in a 4 or less, that digit should be dropped.

EXAMPLE

Assume an Independent Company Exchange with the following characteristics:

	A Function					
	Messages $\phi$			Revenues $\phi$		
	B-I	I-I	Total	B-I	I-I	Total
SP + RC	2150	215	2365	\$2580	\$100	\$2680
SP + 1/2 (SC + RC)	2142	214	2356			

Settlement would be calculated as follows:

$$ARPM = \frac{SP + RC \text{ Total Revenues}}{SP + RC \text{ Total Messages}} = \frac{\$2680}{2365}$$

$$SPM = .1607834 + (.4160742 \times 1.133) - (.06927916 \times 1.133^2)$$

$$SPM = .1607834 + .4714121 - .08893290 = .543$$

$$SEF = (\text{less than } 3000 \text{ Settlement Messages})$$

$$SEF = 1.8250129 - (.0002750043 \times 2356)$$

$$SEF = 1.8250129 - .6479101 = 1.177$$

$$\text{Settlement} = SPM \times SEF \times \text{Settlement Messages}$$

$$\text{Settlement} = .543 \times 1.177 \times 2356 = \$1505.74$$

$\phi$  Combined (State + Interstate) Messages and Revenues.

April 1971



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BELL SYSTEM TRAFFIC AGREEMENT

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1. GENERAL

1.1 This section provides REA borrowers, consulting engineers, and other interested parties with information for use in the design, construction, and operation of REA borrowers' telephone systems. Its purpose is to acquaint REA borrowers and engineers with the terms, conditions, and application of the Bell System Traffic Agreement. This agreement is used for determining toll settlements between the Bell system companies and the Independent companies connecting directly with them.

1.11 This issue, which replaces Issue 3 dated April 1966 and Addenda 1 and 2, discusses the August 1970 Bell System Traffic Agreement provisions. Settlement formulas announced in Joint Reports dated September 1969 and August 25, 1970 by representatives of the Bell System and the United States Independent Telephone Association (USITA) are included in this revision.

1.2 The principal changes in this issue are:

(a) All toll traffic is included in the settlements including Independent-Independent (I-I) toll traffic that is handled according to uniform toll rate structure.

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- (b) Several of the previous settlement tables are eliminated. Each revised settlement is in terms of a mathematical formula.
- (c) A combined dial A settlement factor is now provided. It supersedes TPS and TPL schedules. The A-2 schedule is eliminated. The small exchange factors for dial offices are increased.
- (d) The B-1 settlements are also adjusted. These amounts for operator handled functions are decreased (for ARPM over \$.608) except for offices having a considerable proportion of automatic ticketing function where an increased allowance is established.
- (e) The new B-2 and B-5 settlements reflect decreasing cost trends for handling these message functions.
- (f) A new B-6 schedule covering intertoll dial switching equipment has been added.
- (g) A "floor" is provided to assure all average schedule participating companies at least their current level of settlements until increases in traffic volumes result in higher total settlement.

### 1.3 Application

1.31 The provisions of the traffic agreement should be studied in conjunction with the design of additions or changes to telephone plant. Even for systems already in operation, a clear understanding of the terms of the agreement is still necessary for efficient management. When planning telephone system designs or when expansion and modernization are being considered, familiarity with the traffic agreement will be most valuable.

1.32 Engineering studies concerning toll trunk ownership and automatic toll ticketing plus the determination of the most suitable features of central office operation will be necessary to ascertain the most advantageous design. It is to aid in this respect that the following discussion is offered.

## 2. TYPES OF AGREEMENTS

2.1 The traffic agreements of the individual Bell System companies contain essentially the same provisions as the (Illustrative) TRAFFIC AGREEMENT. (See Appendix II.) Bell System Independent Company Relations Managers will be able to point out any differences or revisions peculiar to the one their company uses. If interchanged toll traffic is to be routed via a Bell operating company, these agreements generally will be used as a basis of settlement with the Independent companies for handling the various types of toll traffic.

- 2.2 Special agreements and modification of the (Illustrative) TRAFFIC AGREEMENT may be proposed by and between Independent companies. The various settlement schedules under earlier contracts may not be commensurate with current costs of handling the interchanged traffic. All these agreements should be studied closely and compared with the Bell (Illustrative) TRAFFIC AGREEMENT terms so that an equitable arrangement will result.
- 2.3 Some interchanged toll traffic settlement arrangements are developed on an individual company cost basis resulting from studies of negotiation between the companies involved. Traffic distribution, equipment costs, and mutually agreeable separation procedures relative to the toll and exchange usage of plant are factors in determining the amount of settlement.

### 3. DISCUSSION OF THE BELL (Illustrative) TRAFFIC AGREEMENT

- 3.01 A copy of the (Illustrative) TRAFFIC AGREEMENT is provided in Appendix II of this section. A study of the terms and conditions of the overall agreement should be made. During this examination, it will be noted that different treatments are prescribed for certain types of messages; therefore, during any study of toll revenue, frequent reference should be made to the traffic agreement stipulations to avoid error.
- 3.02 The Bell (Illustrative) AGREEMENT provides for settlement with the connecting Independent companies based on an "A" function for general participation other than toll operating or ticketing and line haul, a "B" function for manual or automatic toll operating participation, and a "C" function for settlement for line haul for interchange trunk facilities owned by the Independent companies. The settlements are prepared to cover average costs pertaining to the various functions performed by each connecting company in the handling of interchanged traffic.
- 3.03 The "A" settlement is established to compensate the Independent company for commercial, accounting, and promotional expense plus the use of local exchange facilities for interchanged traffic. There are several "A" schedules to provide settlement factors for various types of operations and to cover the Bell-Independent (B-I) cost of local central office equipment, outside plant, and station equipment. Schedules A-1 for DIAL and A-3 for MANUAL operations respectively are similar to prior agreements. Schedule A-4 is for settlement for special trunk terminating equipment located in the Independent company offices and associated with trunk circuits terminating at Bell Centralized Automatic Message Accounting (CAMA) locations.
- 3.031 Schedule A-1--Now applicable to all dial exchanges. See Exhibit C, paragraph III, A, 3.
- 3.032 Schedule A-2--This schedule has been discontinued.

- 3.033 Schedule A-3--Applicable to common battery or magneto manual exchanges.
- 3.034 Schedule A-4--Applicable for use where tributary (usually Class 5) exchanges provide special CAMA trunk or trunk termination facilities handling B-I message toll traffic operating into a Bell automatic ticketing installation.
- 3.035 Small Exchange Factors--Adjustment factors to modify the basic "A" schedules to cover the relatively higher basic costs of small exchanges. They apply to exchanges with 3,000 or less qualifying ~~SENT-PAID + ½ (SENT-COLLECT) + RECEIVED-COLLECT)~~ messages per month.
- 3.04 The "B" commissions compensate the Independent company for the costs of manually or automatically recording and identifying originating toll traffic, the toll switching facilities, and other associated toll operating functions. The B-2 and B-5 schedules provide for separate settlement computations for the identification and recording functions involved in automatically ticketing toll traffic.
- 3.041 Schedule B-1--Applicable to both manually and automatically ticketed and timed messages at locations where some originating messages are automatically handled and some are operator handled. The settlement computations are based on ARPM for such offices having both procedures. The settlement per message (SPM) increases considerably with the percent of toll messages that are automatically handled.
- 3.042 Schedule B-2--Applicable to all messages automatically recorded by the Independent company (except person-to-person, pay station, "third number," and collect calls covered by a mutually agreed upon settlement per message, usually Schedule B-4).
- 3.043 Schedule B-3--This schedule was discontinued in late 1969 by agreement.
- 3.044 Temporary Schedule B-4--Used since 1962 by Bell System companies for settlement for automatically ticketed person-to-person, "third number," collect, and coin telephone messages. This schedule includes settlement for the identification of these messages on either an ANI or ONI basis.
- 3.045 Schedule B-5--This schedule was introduced in 1965 for settlements covering station number identification; viz., the calling number is identified either automatically (ANI) or by an operator (ONI). It is intended to provide settlement for the number identification function performed by an Independent company either at the same location as the automatic message recording function or at locations where only the identification function is performed.
- 3.046 B-6 Schedule--Applicable to intertoll dial switching equipment. This settlement pertains to toll center or tributary offices with Category 3 Intertoll Dial Switching Equipment associated with toll circuits

used for B-I toll or joint B-I I-I, and I-I toll. Included are toll trunks connected to the incoming side of terminating equipment such as SXS office connected with intertoll first selectors.

3.05 The C settlement schedule covers the line haul function and includes the cost of the portions of interexchange trunk facilities provided by the Independent Telephone Company for message toll service, WATS, and other dedicated circuits. The line haul settlements compensate for the use of interexchange toll trunk facilities, including trunk terminating such as carrier, voice frequency repeaters, simplex, composite, and E & M and DX signalling equipment. The number of toll trunks to be provided is a matter of study and agreement between the connecting companies. There should be a sufficient quantity to furnish a mutually satisfactory grade of service for the anticipated traffic. When the parties agree on the number and type of circuits, settlement will be based on these facilities as provided until such time as a new study is made. Line haul settlement is based on the number of trunks in a group and the length of the trunk facilities in route miles.

3.06 The items and conditions of the Bell System Traffic Agreement pertaining to a particular telephone system should be reviewed carefully in order to avoid any misunderstanding relative to the responsibility of either party. Generally, the agreement will adhere to the framework of the (Illustrative) TRAFFIC AGREEMENT. The exhibits and attachments associated with the agreement will vary depending on the design and arrangement of the interconnecting systems.

3.061 Exhibit "A" should be completed to show the Independent company's exchanges, type of equipment, and the method of operation. An exchange is usually defined as a specified area established for the furnishing of local telephone service under a distinct or separate local tariff. It is desirable to reach an understanding with the Bell Company and the regulatory body that each exchange is to be considered a toll rate point. Local tariffs may be the same in several exchanges, but toll charges to nearby towns may be different. There have been situations where two exchanges located several miles apart with extended area service (EAS) between them have been classified for toll settlements as being the same toll rate point. This is usually not desirable and may impose penalties since the line haul, small exchange factor of the "A" schedule, or other settlements may be affected.

3.0611 The Independent company exchanges, points of connection between the systems, and the routing of the circuits conveying B-I messages or services should also be shown in Exhibit A. It is helpful to identify the circuit groups (No. 1, No. 2, etc.) and to indicate the number of circuits in the groups and the route mileage.

3.062 In most cases, Exhibit "B" of the traffic agreement will cover the arrangements for "operating" and will specify outward "operating" functions that have been agreed upon, centralized automatic message accounting, toll ticketing, ANI, or other functions provided by either party.

- 3.063 Exhibit "C" of the (Illustrative) TRAFFIC AGREEMENT includes a definition of terms and describes fully the details and the basis of settlement for the various functions. It covers the method of computation of the various quantities of specific messages applicable to each type of settlement and acceptable methods of calculation for each schedule. The procedure for computing specific settlement amounts is outlined.
- 3.064 The various general schedules upon which settlement is based are a part of the agreement. Copies of the current schedules are included as attachments following Exhibit C of the (Illustrative) TRAFFIC AGREEMENT.
- 3.07 The average revenue per message (ARPM) is computed separately for each exchange in the case of the A-1 and A-3 settlements.
- 3.08 The "B" schedules should be carefully evaluated in instances where the purchase and installation of automatic toll ticketing or number identification equipment is being considered. The average "B" settlements have fluctuated considerably as a result of separate company negotiations. The annual charges, including rate of return on investment and operating features of each proposed ATT (Automatic Toll Ticketing - recording function) and ANI (Automatic Number Identification) installation, should be accurately compared to the estimated revenue that may be obtained. The rate of return in excess of annual charges for ATT should then be compared to the net rate of return over annual charges for providing ANI only at the tributary to be used in conjunction with CAMA at the toll center. Settlement schedules covering automatically ticketed messages are generally lower than for operator-handled messages.
- 3.09 The B-4 schedule was developed for interim use on the basis of estimates of the reduction in operator work time and the cost of ticketing Person-to-Person, Collect and Special Services (PPCS) messages automatically. The Bell System recommends its use until there is sufficient general experience available to enable the making of cost studies as the basis for the development of new average schedules.
- 3.10 Toll trunk ownership is desirable throughout the borrower's service area where satisfactory and reliable operation can be maintained. Line haul settlement will generally be compensatory. For line haul settlement purposes, trunks may be for one-way or two-way message toll, CAMA or ATT usage, or a combination. Separate dedicated trunks for such purposes as verification, intercept, information, or similar special service trunks are generally included in the toll group category for line haul settlement purposes because such traffic originally was carried by multipurpose toll trunks. Compensation is described in Schedule C.
- 3.101 All toll trunks in one lead between a tributary (Class 5) exchange and a toll center are usually treated as being in the same group. Example: Toll office A and class 5 office B are connected

by 12 one-way outgoing trunks from A, 14 one-way incoming, and 6 CAMA. These would be considered as one group of 32 toll trunks even if some were carrier and some were physical.

3.102 In a few instances, two separate toll leads may be provided between an exchange and its toll center. It may be impractical to expand or try to increase reliability of an existing toll line. The total route length of each lead may be different; and the settlement computed on the average length of the two routes or, in some cases, each route may be computed separately.

3.103 Trunk groups between different pairs of central offices are considered separate circuit groups even though they may be in a common cable sheath or use the same pole line.

3.11 The general interpretation of circuits in Schedule C has been to signify "channels" regardless of whether the individual circuits are obtained by using two-wire or four-wire physical facilities, or are derived by carrier or microwave. The interpretation is significant in trunk design and connecting company negotiation.

3.12 Situations may occur where the connecting company may request that four-wire voice circuits be provided where two-wire will actually meet current standards transmission criteria at less expense. REA standards provide for meeting toll transmission objectives satisfactorily with two-wire voice physical facilities. Similarly, separate cables may be stipulated to segregate subscribers' loops from trunk facilities or to reduce specific noise characteristics.

3.13 Where Schedule C average settlement rates are apparently inequitable for B-I line haul settlement, a cost study of this function only may be made to determine the line haul settlement amounts without affecting the "A" and "B" average schedule application.

3.14 A Joint Report of August 25, 1970, by representatives of the Bell system and the United States Independent Telephone Association announced the 1970 revision of the (Illustrative) TRAFFIC AGREEMENT. Effective dates of the adjustments are January 1, 1970, for the intrastate traffic and July 1, 1970, for the I-I toll traffic if there is acceptance to the agreement in 60 days by the connecting company. If the new schedules result in a decrease in settlements for existing toll center complexes, a floor is established to maintain the present settlement amount as a minimum, assuming there is no reduction in traffic volumes.

3.15 Engineering consideration should be given to the effect of the latest provisions of the Bell Traffic Agreement on initial system designs and in connection with the expansion and modernization of operating systems. A copy of the current traffic agreement, as prepared by the particular Associated Bell Connecting Company involved, should be obtained from the Independent Company Relations Manager, and its provisions carefully analyzed with respect to any individual project.

4. MISCELLANEOUS SPECIAL SERVICES

4.1 A Special Services Agreement (August 1970) presents average settlement schedules for portions of joint facilities provided by an Independent telephone company for certain types of special services. The agreement includes:

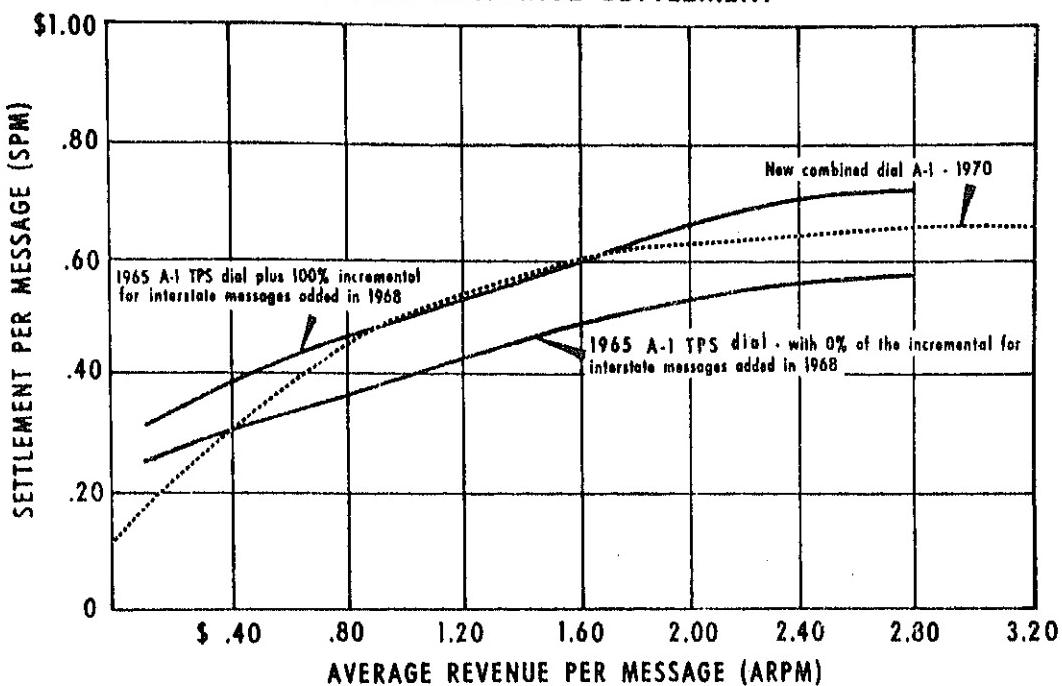
Private Line Telephone  
Data (voice grade)  
TELPAK (voice grade or narrower)  
Teletypewriter service (exchange and private line)  
Telephotograph Transmission  
Remote metering, supervisory, and signalling services

4.2 The agreement may include combinations of the above items. Appropriate settlements for the various services are intended to be additive or "building block" in consideration of station equipment, central office equipment, and local and exchange channels.

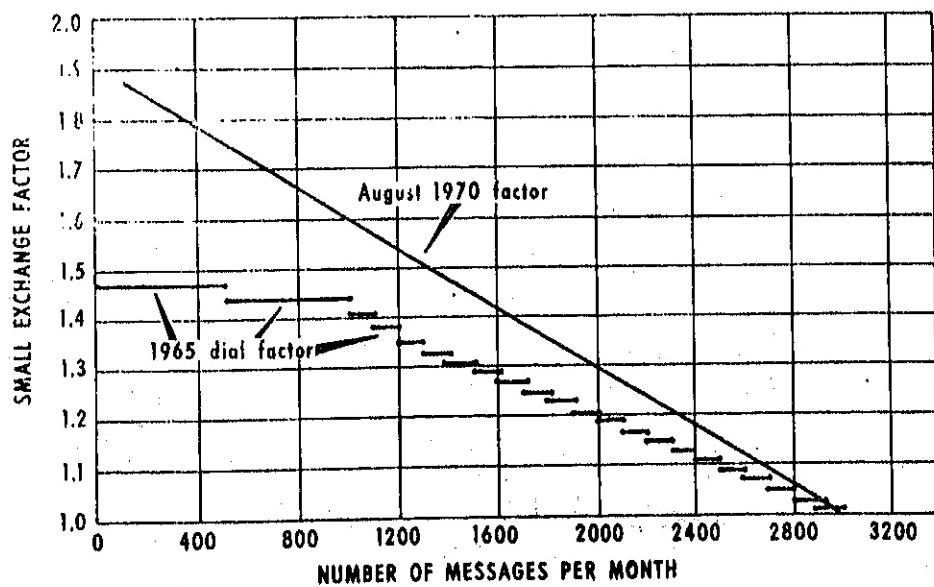
4.3 Settlement for "foreign exchange" service is not included among the special services covered. "Foreign exchange" is the provision of service for a particular subscriber from an exchange other than the local exchange in which the subscriber is located. For toll messages originated by or charged to foreign exchange subscribers, 50 percent of the normal "A" settlement is allowable plus any normal "B" or line haul that is involved.

GRAPHICAL PRESENTATION OF SCHEDULES

'A' DIAL EXCHANGE SETTLEMENT

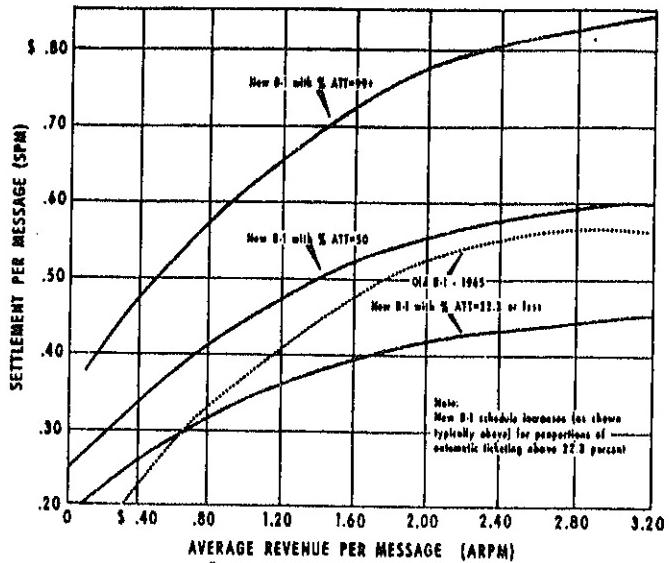


SMALL EXCHANGE FACTORS FOR 'A' SCHEDULES (DIAL)

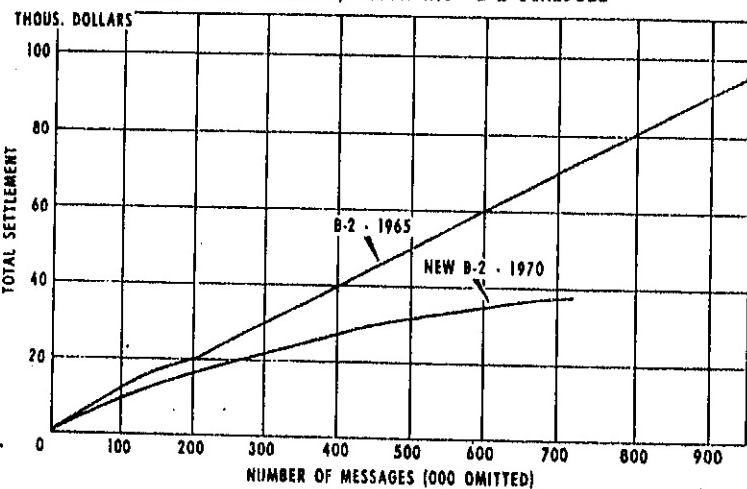


**APPENDIX I**  
Page 2

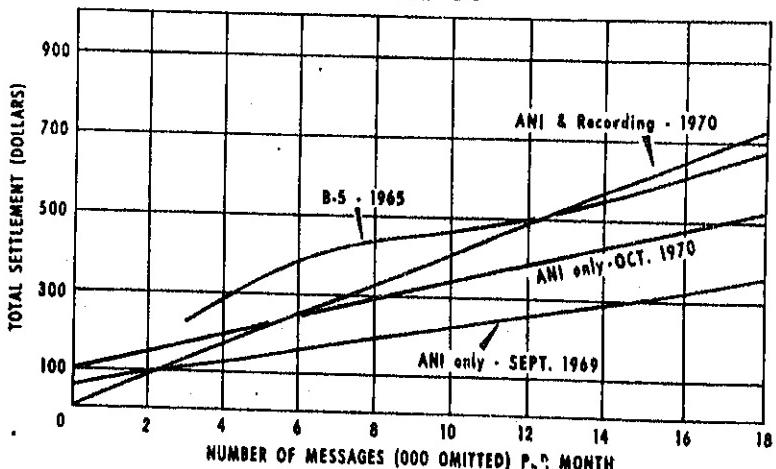
**B-1 SCHEDULE--OPERATOR HANDLED FUNCTION  
(with incremental ATT)**



**AUTOMATIC TICKETING, RECORDING B-2 SCHEDULE**



**ANI SCHEDULE B-5**



August 1970

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Appendix II

(Illustrative)

TRAFFIC AGREEMENT

Traffic Agreement between , a corporation organized and operating under the laws of the State of , herein called the Independent Company and , a corporation organized and operating under the laws of the State of , herein called the Bell Company.

Long Distance Message Telecommunications Service (LDMTS) traffic and Wide Area Telecommunications Service (WATS) traffic carried by the system operated by the Independent Company and the system operated by the Bell Company will be handled upon the terms and conditions stated below. For the purpose of this Agreement, the system operated by the Independent Company shall include systems of Companies other than the Bell Company with which the Independent Company connects, as shown on the attached "Exhibit A" made a part hereof, and the system operated by the Bell Company shall include systems of Companies, other than the Independent Company, with which the Bell Company connects.

1. Independent Company Exchanges.

The exchanges of the Independent Company system covered by this Agreement are shown in "Exhibit A".

2. Physical Connection.

The Bell Company and the Independent Company will connect their respective systems at the point or points shown in "Exhibit A".

The Independent Company will not, without the written consent of the Bell Company, connect the toll lines of the Bell Company with any toll lines other than those indicated in "Exhibit A".

3. Routing of Traffic.

The traffic interchanged under this Agreement will be routed as indicated in "Exhibit A".

4. Operating.

The operating required hereunder will be performed by the company designated in "Exhibit B" hereto attached and made a part hereof.

5. Methods and Practices.

With respect to all matters covered by this Agreement, each company will adopt and comply with standard operating methods and practices comparable to those of the Bell System and will observe the rules and regulations of the lawfully established tariffs applicable to the services provided.

Each company will, upon request, furnish to the other such information relating to the business covered herein as may reasonably be required.

6. Exchange and Toll Facilities.

Each company will construct, equip, maintain and operate its system so that good service will be furnished to the public at all times, and each will furnish adequate facilities therefor.

7. Protection.

Each company will take reasonable precautions in the location, construction and maintenance of its lines for protection against hazard and interference from foreign wire lines.

8. Monthly Settlements.

Each company will collect all charges payable by its customers for telecommunications originating or terminating on its system, and will account and be responsible to the other for the latter's portion thereof. Each company will keep adequate records of its transactions hereunder, and such records will be subject to inspection by the other at all reasonable times. Each company will furnish to the other such information as may be required for monthly settlement purposes.

Settlement statements hereunder will be rendered monthly by the Bell Company to the Independent Company and remittance in full will be made by the debtor company within thirty (30) days thereafter.

9. Basis of Settlement.

The amounts to be received monthly by the respective companies for facilities furnished and services rendered hereunder, will be determined in accordance with the Basis of Settlement shown in "Exhibit C" hereto attached and made a part hereof.

10. Defaults or Violations.

If either company defaults in the payment of any amounts due hereunder, or violates any other provision of this Agreement, and if such default or violation shall continue for thirty (30) days after written notice thereof, the other company may terminate this Agreement forthwith by written notice. If either Company connects the toll lines of the other company other than as specifically provided herein, this agreement may be terminated forthwith by written notice.

The failure of either company to enforce any of the provisions of this Agreement or the waiver thereof in any instance shall not be construed as a general waiver or relinquishment on its part of any such provision, but the same shall, nevertheless, be and remain in full force and effect.

11. Cancellation of Previous Agreements.

Except as to any amounts due thereunder, this Agreement cancels all previous Agreements between the companies or their respective predecessors covering interchange of LDMTS and WATS traffic.

12. Term of Agreement.

This Agreement shall become effective upon execution.

Unless sooner terminated as herein provided, this Agreement will continue in force for a period of one year from date of execution hereof and thereafter, unless terminated by thirty (30) days prior notice in writing from either company to the other.

13. Subsequent Exhibits.

From time to time, by agreement of the parties, new Exhibits may be substituted for the attached exhibits, superseding and cancelling Exhibits then in effect.

IN WITNESS WHEREOF, the said companies have caused this Agreement to be executed in their behalf this \_\_\_\_\_ day of 19.

Witness:

(Name of Independent Company)

By \_\_\_\_\_  
(Title)

Witness:

(Name of Associated Company)

By \_\_\_\_\_  
(Title)

August, 1971

EXHIBIT A

Effective as of , 19 .

Attached to and made a part of

TRAFFIC AGREEMENT

Executed , 19 .

Between (Name of Independent Company)  
and (Name of Associated Company)

(It is suggested that this exhibit include:

1. A schematic diagram showing the exchanges and toll lines of the Independent Company's system and the point or points of connection between the systems of the respective Companies.
2. A table showing the routing of LDMTS and WATS traffic.
3. An alphabetical list of the exchanges of the Independent Company's system covered by this agreement with notations as to the type of central office involved as well as the "B" settlement schedules applicable, if any.)

Identified and Approved this day of , 19

Witness:

(Name of Independent Company)

By

(Title)

Witness:

(Name of Associated Company)

By

(Title)

EXHIBIT "B," OPERATING

Effective as of , 19 .

Attached to and made a part of

TRAFFIC AGREEMENT

Executed on , 19 .

Between (Name of Independent Company)  
and (Name of Associated Company)

From the effective date hereof, the Bell Company will perform or cause to be performed the operating required for telecommunications covered under said traffic agreement, except that the Independent Company will perform the operating as required for inward telecommunications in which its system is involved and will also perform the outward operating required for the telecommunications between the points listed below:

Between

A

B

Identified and Approved this day of , 19 .

Witness:

(Name of Independent Company)

By

(Title)

Witness:

(Name of Associated Company)

By

(Title)

August, 1970

EXHIBIT C

Basis of Settlement

Attached to and made a part of Traffic Agreement  
executed .....19..

Between (Name of Independent Company)  
and (Name of Associated Company)

This exhibit shall be effective as of , 19 .  
It shall be the basis of settlement for all traffic covered by  
the above Agreement (except traffic which is not furnished  
under nationwide or statewide toll rate schedules identical  
for both the Bell Company and the Independent Company).

I. For the purpose of settlement under this Agreement:

AN EXCHANGE is a specified area established for  
the furnishing of local telephone service under  
a distinct or separate local tariff. It usually  
embraces a city, town, village or unincorporated  
community and environs thereto and consists of  
one or more central offices, together with the  
associated plant used in furnishing service  
within that area.

A dial exchange is an exchange at which  
more than 50% of the company-owned tele-  
phone stations are connected to a dial  
central office or offices. All other  
exchanges are considered to be manual  
exchanges.

A MESSAGE is a toll (long distance telecommu-  
nications) call which has been completed. Any  
references herein to Bell-Independent (B-I)  
messages shall mean only those using the  
systems of both the Bell Company and the  
Independent Company and any reference to  
Independent-Independent (I-I) messages shall  
mean only those using the system of the  
Independent Company unless otherwise agreed  
upon.

A SEND-PAID (SP) MESSAGE is a toll (long  
distance telecommunications) message  
originating at a telephone of the Independent  
Company where the charge is to be billed to  
the originating telephone.

- 2 -

A SENT-COLLECT (SC) MESSAGE is a toll (long distance telecommunications) message originating at a telephone of the Independent Company where the charge is to be billed to the terminating telephone.

A RECEIVED-COLLECT (RC) MESSAGE is a toll (long distance telecommunications) message terminating at a telephone of the Independent Company where the charge is to be billed to the terminating telephone.

A toll credit card message or a toll message to be billed to a third telephone will be treated as "sent-collect" at the telephone where it originates and "received-collect" at the telephone where it is billed, except that if the charges are to be billed to another telephone in the same exchange in which the message originates, such message shall be treated as "sent-paid". This treatment shall apply only to messages billed to credit cards issued in accordance with industry recognized practices.

A PERSON CALL BACK (P-CB) MESSAGE is a delayed person to person toll (long distance telecommunications) message where the call back to the customer who initially originated the call is completed by an operator at a toll center other than that from which the call was originally filed. Such a message will be treated as "sent-collect" at the calling telephone from which the message is subsequently completed and "received-collect" at the telephone where it is billed.

- II. When I-I toll traffic center schedules identical the Independent Company local business in which participate, the Independent Company se such local traffic.
- III. Each company will reimburse expended at the request messenger charges and the be included in the month is responsible for uncol it and any commissions in other similar establishm and for commissions it p at public telephones.

IV. The amount of the Independent Company settlement for its participation in originating and terminating B-I and I-I toll messages will be determined each month as follows:

A. Schedule A (Settlement for all participation other than toll operating and line haul).

1. Determine the number of settlement messages for each exchange in the system of the Independent Company by adding:

- a. The number of SP messages.
- b. One-half of the SC messages.
- c. One-half of the RC messages.

2. Compute for each exchange the average revenue per message (ARPM) by dividing the total charges (including report charges) for the total number of SP plus RC messages by the total number of such messages.

3. Determine from the appropriate "A" Schedules (Schedule A-1 applicable to dial exchanges or Schedule A-3 applicable to manual exchanges, set forth in Attachments 1 and 2 respectively to this Exhibit) the settlement applicable to the messages in 1. above for each exchange.

4. Where the Independent Company exchange is served by automatic ticketing equipment at a toll center of the Bell Company, a settlement amount will apply for the additional trunk equipment provided by the Independent Company as set forth in Schedule A-4 in Attachment 3 to this Exhibit.

5. The total of the Independent Company's Schedule A settlement is the total of the amounts separately determined in A.3 and A.4 above.

B. Schedule B (Applicable to toll operating - including operator ticketing and timing, automatic message recording, operator number identification, automatic number identification and for provision of Category 3 equipment).

1. For messages handled by operators (BOH) for exchanges with or without automatically ticketed traffic -

- a. Determine for each Independent Company by exchange or toll office (if the latter serves more than one exchange) as shown on Exhibit A the number of SP plus SC settlement messages on which the outward toll operating is performed by the Independent Company.
  - b. Compute for such messages as determined in 1.a above the ARPM by dividing the total charges (including report charges) by the total number of such messages.
  - c. If automatic ticketing is also performed at the exchange or toll office -
    - (1) Determine the number of automatically ticketed (AT) messages at this exchange or toll office.
  - d. Determine from Schedule B-1 in Attachment 4 to this Exhibit the settlement applicable to the messages determined in 1.a above for each exchange or toll office (if the latter serves more than one exchange).
2. For messages which are automatically recorded, including messages where identification is made by the operator (excepting messages described in 3. following) -
    - a. Determine for each Independent Company automatic ticketing installation as shown in Exhibit A the number of messages automatically recorded by the Independent Company.
    - b. Determine from Schedule B-2 in Attachment 5 to this Exhibit the settlement applicable to the messages determined in a. above.
  3. For automatically ticketed person-to-person, collect and coin telephone messages, the settlement is determined using a mutually agreed upon settlement amount per message.
  4. For automatically ticketed messages for which the calling number is identified by the Independent Company, either automatically (ANI) or by an operator (ONI) -
    - a. Determine for each Independent Company exchange the number of messages actually identified at the exchange by ANI equipment, or by ONI equipment.

- b. Determine from Schedule B-5 in Attachment 6 to this Exhibit the settlement applicable to each Independent Company exchange.
  5. For Category 3 Intertoll Dial Switching equipment provided by the Independent Company -
    - a. Determine from Schedule B-6 in Attachment 7 to this Exhibit the settlement for this equipment
  6. The total of the Independent Company's Schedule B settlement is the sum of the amounts separately determined in 1.d, 2.b, 3, 4.b and 5.a.
- C. Schedule C (Settlement for Line Haul).
1. Determine the total of the Independent Company's settlement for Line Haul participation by use of the computation summary set forth in Attachment 8 to this Exhibit. The number of interexchange circuits required for the handling of B-I and I-I business, upon which settlements will be based, will be determined by joint studies following mutually acceptable engineering standards and procedures.
- Recomputation of the settlement amount shall be made at the request of either company, when deemed necessary by substantial changes in the per cent of toll use of interexchange circuits having combined usage (Toll, EAS and other local services) or by changes in routing or size of circuit groups. Unless otherwise agreed by the parties hereto, the settlement amount developed from such recomputation shall become effective for the settlement month in which the recomputation is completed; provided, however, that if a recomputation is made necessary by a physical change in the circuit groups or by a change in toll usage, the settlement amount so recomputed, from and after
- Settlement amounts due the determined each month as
- A. Line Haul settlements determined in IV.C. above cover participation in WATS.
  - B. Schedule B-6 settlements determined in IV.B.5. above cover participation in WATS.
  - C. Schedule A settlements determined in IV.A. above cover the termination of outward WATS messages.

D. For outward WATS provided customers on the system of the Independent Company -

1. WATS revenue will be subject to division through the settlement arrangements set forth in a. and b. below.

a. Schedule "A" Settlement.

Divide the current month's message toll "A" SPM by the current month's ARPM for the exchange in which the WATS customer is located. Apply this ratio to the WATS revenue to determine the monthly "A" settlement amount.

b. Schedule "B" Settlement.

Where the Independent Company performs the operating work required for all originating WATS traffic, divide the current month's message toll "B" SPM called for by all applicable B Schedules by the current month's ARPM for the exchange or toll office handling this WATS traffic. Apply this ratio to the WATS revenue to determine the monthly "B" settlement amount.

Where the Independent Company performs only part of the operating work required (such as at partial tributaries) for WATS traffic, an appropriate adjustment shall be made. Settlement in such cases shall be determined as follows:

- (1) Determine the ratio of a typical month's revenue for the Independent Company's WATS customer's messages ticketed for the WATS area selected, to the total originating revenue for all messages of this customer to this WATS area. Apply the ratio obtained to the WATS revenue to determine the portion of the revenue to which the "B" settlement is applicable.
- (2) Divide the current month's message toll "B" SPM by the current month's ARPM for the Independent Company exchange or toll office handling this WATS traffic, and apply this ratio to the product obtained in (1) to determine the monthly "B" settlement amount.

E. For inward WATS messages originating at points on the system of the Independent Company -

1. Schedule "A" Settlement:

- a. Each such inward WATS message will be considered as sent collect in determining the "A" number of messages in IV.A.1. above.
- b. Inward WATS messages will not be used in developing the ARPM used in determining the Schedule "A" SPM.

2. Schedule "B" Settlement:

- a. Each inward WATS message on which the outward toll operating is manually performed by the Independent Company will be considered as sent collect in determining the "B" number of messages in IV.B.1.a. above.
- b. Inward WATS messages will not be used in developing the ARPM used in determining the Schedule "B" SPM.
- c. Each inward WATS message on which the outward toll operating is automatically performed will be considered as an automatically ticketed SP toll message in determining the "B" number of messages in IV.B.2.a. above.

F. For inward WATS provided customers on the system of the Independent Company -

1. Schedule "A" Settlement (including local access and measured timing facilities):

which the inward WATS divide one-half of the SPM by the "A" ARPM.

ained in "a" to the to determine the amount Company. The remainder revenue will be due the

the local facilities are company (Bell or Independent), reimbursed by the Inde- these facilities..

VI. The amount as determined in III, IV and V above will be due the Independent Company. The remainder, if any, of the amount billed by the Independent Company for the settlement traffic will be due Bell.

Approved and executed this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_.

Witness: \_\_\_\_\_ (Name of Independent Company)

By \_\_\_\_\_ (Title)

Witness: \_\_\_\_\_ (Name of Associated Company)

By \_\_\_\_\_ (Title)

REA TE & CM 225  
Appendix II  
Exhibit C  
Attachment I

SETTLEMENT SCHEDULE A-1  
Applicable to Dial Exchanges

Settlement Formula

- For an ARPM of \$1.928 or less\*

$$SPM = .1205784 + (.5036719 \times ARPM) - (.1252662 \times ARPM^2)$$

- For an ARPM of \$1.929 or more\*

$$SPM = .5860843 + (.02071385 \times ARPM)*$$

- If there are less than 3000 settlement messages, a Small Exchange Factor (SEF) is applicable and will be calculated as follows:

$$SEF = 1.8977761 - (.0002992587 \times \text{settlement messages})$$

- Settlement = SPM X SEF X settlement messages

\* Rounded to three decimal places. If the fourth decimal place in the natural calculation results in a 5 or more, the rounding is to the next higher third digit after the decimal. If the fourth decimal place in the natural calculation results in a 4 or less, that digit should be dropped.

SETTLEMENT SCHEDULE A-3  
Applicable to Manual Exchanges

Settlement Formula

- For an ARPM of \$1.079 or less\*

$$SPM = .1161516 + (.5368008 \times ARPM) - (.1881763 \times ARPM^2)^*$$

- For an ARPM of \$1.080 or more\*

$$SPM = .3351836 + (.1307631 \times ARPM)^*$$

- If there are less than 3000 settlement messages, a Small Exchanges Factor (SEF) is applicable and will be calculated as follows:

$$SEF = 1.16 - (.00005333 \times \text{settlement messages})$$

- Settlement = SPM X SEF X settlement messages

\* Rounded to three decimal places. If the fourth decimal place in the natural calculation results in a 5 or more, the rounding is to the next higher third digit after the decimal. If the fourth decimal place in the natural calculation results in a 4 or less, that digit should be dropped.

REA TE & CM 225  
Appendix II  
Exhibit C  
Attachment 3

**SETTLEMENT SCHEDULE A-4**

Settlement

For the additional trunk equipment  
provided by the Independent Company  
in connection with interexchange  
trunks handling B-I LDMTS traffic  
into a Bell automatic ticketing  
installation - \$5.00 per month  
per trunk equipped

### Summary of Computation

Number of trunks handling B-I  
traffic so equipped

Total monthly settlement amount.

SETTLEMENT SCHEDULE B-1

Applicable to Operator Handled Messages

Settlement Formula

1. . For an ARPM of \$2.558 or less\*

$$SPM = .1879537 + (.1764309 \times ARPM) - (.03056232 \times ARPM^2)^*$$

- . For an ARPM of \$2.559 or more\*

$$SPM = .3879976 + (.02 \times ARPM)^*$$

2. . If automatic ticketing is also performed at the exchange or toll office, a Percent Automatic Ticketing Factor should be determined as follows: Combined (state + interstate) B-I + I-I "B" function messages are used to determine this factor.

- a. Divide B-I + I-I automatically ticketed messages by the sum of B-I + I-I SP + SC operator handled messages plus B-I + I-I automatically ticketed messages to determine percent of messages automatically ticketed (% AT).

- b. If % AT is less than 22.3%, proceed to step 3 below. If % AT is 22.3% or more, determine AT Factor as follows:

$$\text{Percent AT Factor} = .7573822 + (1.092783 \times \% AT)^*$$

- c. Multiply the SPM calculated in 1. above by the Percent AT Factor.

3. . Multiply either the SPM, calculated in 1. above, or the resultant SPM calculated in 2.c. above by BOH settlement messages (SP + SC).

\* Rounded to three decimal places. If the fourth decimal place in the natural calculation results in a 5 or more, the rounding is to the next higher third digit after the decimal. If the fourth decimal place in the natural calculation results in a 4 or less, that digit should be dropped.

REA TE & CM 225  
Appendix II  
Exhibit C  
Attachment 5

SETTLEMENT SCHEDULE B-2

Applicable to B-Automatic Ticketing Recording Function

Settlement Formula

SPM = .0880786 - [.00000005117526 X (B-I + I-I automatically recorded messages)] (NOTE: If B-I + I-I AT Messages exceed 725,000, determine SPM on the basis of 725,000 Messages)\*

Settlement = SPM X AT messages

\* Rounded to four decimal places. If the fifth decimal place in the natural calculation results in a 5 or more, the rounding is to the next higher fourth digit after the decimal. If the fifth decimal place in the natural calculation results in a 4 or less, that digit should be dropped.

TEMPORARY

SCHEDULE B-4

ARPM				ARPM				ARPM			
	Over	Not Over	Settlement Amount per Message		Over	Not Over	Settlement Amount per Message		Over	Not Over	Settlement Amount per Message
\$ .100	\$ .105	\$ .110	\$ .140	\$ .325	\$ .330	\$ .335	\$ .213	\$ .700	\$ .720	\$ .720	\$ .320
.105	.110	.115	.141	.330	.335	.340	.214	.720	.740	.740	.325
.110	.115	.120	.143	.335	.340	.345	.216	.740	.760	.760	.330
.115	.120	.125	.145	.340	.345	.350	.217	.760	.780	.780	.336
.120	.125	.130	.146	.345	.350	.355	.219	.780	.800	.800	.341
.125	.130	.135	.148	.350	.355	.360	.220	.800	.820	.820	.346
.130	.135	.140	.150	.355	.360	.365	.222	.820	.840	.840	.351
.135	.140	.145	.151	.360	.365	.370	.223	.840	.860	.860	.356
.140	.145	.150	.153	.365	.370	.375	.225	.860	.880	.880	.361
.145	.150	.155	.154	.370	.375	.380	.226	.880	.900	.900	.366
.150	.155	.160	.156	.375	.380	.385	.228	.900	.920	.920	.371
.155	.160	.165	.157	.380	.385	.390	.229	.920	.940	.940	.375
.160	.165	.170	.159	.385	.390	.395	.231	.940	.960	.960	.380
.165	.170	.175	.161	.390	.395	.400	.232	.960	.980	.980	.385
.170	.175	.180	.162	.395	.400	.405	.234	.980	1.000	1.000	.390
.175	.180	.185	.164	.400	.405	.410	.235	1.000	1.050	1.050	.397
.180	.185	.190	.166	.405	.410	.415	.237	1.050	1.100	1.100	.407
.185	.190	.195	.167	.410	.415	.420	.238	1.100	1.150	1.150	.417
.190	.195	.200	.169	.415	.420	.425	.240	1.150	1.200	1.200	.427
.195	.200	.205	.170	.420	.425	.430	.241	1.200	1.250	1.250	.437
.200	.205	.210	.172	.425	.430	.435	.243	1.250	1.300	1.300	.446
.205	.210	.215	.173	.430	.435	.440	.244	1.300	1.350	1.350	.455
.210	.215	.220	.175	.435	.440	.445	.246	1.350	1.400	1.400	.464
.215	.220	.225	.177	.440	.445	.450	.247	1.400	1.450	1.450	.473
.220	.225	.230	.178	.445	.450	.455	.249	1.450	1.500	1.500	.481
.225	.230	.235	.180	.450	.455	.460	.250	1.500	1.550	1.550	.489
.230	.235	.240	.182	.455	.460	.465	.252	1.550	1.600	1.600	.497
.235	.240	.245	.183	.460	.465	.470	.253	1.600	1.650	1.650	.504
.240	.245	.250	.185	.465	.470	.475	.255	1.650	1.700	1.700	.511
.245	.250	.255	.187	.470	.475	.480	.256	1.700	1.750	1.750	.518
.250	.255	.260	.189	.475	.480	.485	.258	1.750	1.800	1.800	.524
.255	.260	.265	.190	.480	.485	.490	.259	1.800	1.850	1.850	.530
.260	.265	.270	.192	.485	.490	.495	.261	1.850	1.900	1.900	.536
.265	.270	.275	.194	.490	.495	.500	.262	1.900	1.950	1.950	.542
.270	.275	.280	.195	.495	.500	.505	.264	1.950	2.000	2.000	.548
.275	.280	.285	.197	.500	.520	.540	.267	2.000	2.100	2.100	.555
.280	.285	.290	.199	.520	.540	.560	.272	2.100	2.200	2.200	.564
.285	.290	.295	.200	.540	.560	.580	.277	2.200	2.300	2.300	.571
.290	.295	.300	.202	.560	.580	.600	.283	2.300	2.400	2.400	.576
.295	.300	.305	.203	.580	.600	.620	.288	2.400	2.500	2.500	.581
.300	.305	.310	.205	.600	.620	.640	.293	2.500	2.600	2.600	.584
.305	.310	.315	.206	.620	.640	.660	.298	2.600	2.700	2.700	.586
.310	.315	.320	.208	.640	.660	.680	.304	2.700	2.800	2.800	.587
.315	.320	.325	.210	.660	.680	.700	.309	2.800	2.900	2.900	.588
.320	.325		.211	.680	.700		.314	2.900	3.000		.589
								Each Additional \$ .10 or Portion			.001

SETTLEMENT SCHEDULE B-5

Applicable to B-Automatic Ticketing Identification Function

Settlement Formula

For exchanges performing both the Automatic Recording and the Identification function:

$$\text{Settlement} = \$0.0404 \times (\text{B-I} + \text{I-I identified messages})$$

For exchanges performing the Automatic Identification Function but not the Automatic Recording Function:

$$\text{Settlement} = [\$0.0233 \times (\text{B-I} + \text{I-I identified messages})] + \$102$$

SETTLEMENT SCHEDULE B-6

Category 3 Equipment

Summary of Computation

Location*	No. of Circuits**	Settlement Amount
_____	( _____ X \$10.129) + \$45.71	_____
_____	( _____ X \$10.129) + \$45.71	_____
_____	( _____ X \$10.129) + \$45.71	_____

(Continued as required)

Total Monthly Settlement \_\_\_\_\_

\* Applies at each location (toll center or tributary office) with Category 3 Intertoll Dial Switching equipment associated with toll circuits used for (1) only B-I toll traffic, (2) both B-I toll traffic and I-I toll traffic, (3) jointly for both B-I toll traffic and I-I toll traffic, or (4) only I-I toll traffic.

\*\* The circuits included are those working toll circuits connected to the incoming side of equipment classified as Category 3 intertoll dial switching equipment as described in the 1963 Separations Manual, February 1969 edition, Paragraph 24.5, e.g., at a Step by Step office connected to intertoll incoming first selectors. (In those cases where Extended Area Service, Optional Calling, or some other tariff arrangement use toll circuits jointly with Message Toll, special treatment will be required.)

## LINE HAUL SETTLEMENT

## SUMMARY OF COMPUTATION

	Between _____	- Circuit Group -
	and _____	<u>No. 1</u> <u>No. 2</u> <u>etc.</u>
1. Circuit Group Designation		
2. No. of circuits*		
3. Percent use of 2 for settlement Traffic**		
4. No. of circuits dedicated to exclusive use for WATS, TWX, etc.		
5. Group size for settlement purposes (Line 2 + Line 4)***		
6. Applicable cost factor per route mile (Page 2)		
7. Route miles in Independent Company section		
8. Total Line Haul amount (Line 6 X Line 7)		
9. Percent use of Line 5 for settlement traffic#		
10. Monthly line haul amount due Inde- pendent Co. (Line 8 X Line 9)		
11. Total of Line 10 for all circuit groups		

\*The total number of circuits required or provided (other than dedicated circuits) to handle message toll, WATS, and TWX traffic, and all forms of EAS and other local traffic where such traffic is combined with toll, is entered on this line.

\*\*Based on mutually acceptable usage studies.

#Compute the composite percent use of total group for settlement traffic using the following:

$$\text{Line 9} = \frac{(\text{Line 2} \times \text{Line 3}) \text{ plus } (\text{Line 4})}{(\text{Line 2} \text{ plus Line 4})}$$

\*\*\*A Circuit Group consists of the number of circuits required to handle traffic between terminals located in two toll centers or in a toll center and a tributary.

SCHEDULE C

No. of Circuits In Use In Group	Average Cost Factor Per Route Mile Per Month
1	\$ 4.00*
2	8.00
3	12.00
4	15.80
5	19.40
6	22.80
7	26.00
8	29.00
9	31.80
10	34.35
11	36.65
12	38.85
13	40.90
14	42.90
15	44.80
16	46.70
17	48.50
18	50.30
19	52.10
20	53.90
21	55.70
22	57.50
23	59.30
24	61.10
25	62.85
26	64.60
27	66.35
28	68.10
29	69.85
30	71.60
31	73
32	75
33	
34	
35	
36	83.00
37	85.60
38	87.35
39	89.10
40	\$ 1.70 Per Route Mile

Over 40:  
 For Each  
 Ckt. Add.

\* Single circuit serving toll station exclusively - \$5.00 per route mile

Scptember 1962  
 (August 1970 Issue)

(Illustrative)

SUPPLEMENT

Effective \_\_\_\_\_

This Supplement amends the Traffic Agreement dated \_\_\_\_\_ which became effective as of \_\_\_\_\_ between Independent Company and Bell Company as follows:

Where application of the settlement schedules set forth in said Traffic Agreement results in an overall monthly settlement amount less than \$ \_\_\_\_\_ [the average of the monthly B-I settlement amounts for the settlement periods from \_\_\_\_\_ through \_\_\_\_\_ computed under the previously applicable Traffic Agreement between our respective companies plus I-I toll revenues for this same period, if any] a supplemental settlement amount, representing the difference between \$ \_\_\_\_\_ and the sum of the settlement amounts calculated under this agreement, will be due the Independent Company each month.

This supplemental settlement amount will become effective \_\_\_\_\_ and will continue in effect until the month in which the sum of the monthly settlement amounts, as developed under said Traffic Agreement, is equal to or exceeds \$ \_\_\_\_\_. At such time, the supplemental settlement amounts provided for herein shall cease and this Supplement shall terminate.

This Supplement modifies the identified Traffic Agreement only as above stated, and, when executed by both parties, will be attached to and made a part thereof.

Executed this                    day of            19

(Independent Company)

Witness:

By \_\_\_\_\_  
(Title)

(Bell Company)

Witness:

By \_\_\_\_\_  
(Title)